

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-170 (canceled).

171. (Previously presented) An electrokinetic device comprising:
- a solid substrate, wherein the solid substrate comprises a fluid path formed in the solid substrate;
  - a first pumping conduit in the fluid path having a first end and a second end, said first pumping conduit comprising a porous dielectric material;
  - a first electrode, wherein the first electrode is in electrical communication with the first end of the first pumping conduit when the fluid path contains a transport fluid in which electroosmotic flow can be induced;
  - a first conducting conduit having a first end and a second end, wherein the first end of the first conducting conduit is in electrical communication with the second end of the first pumping conduit at a first junction when the fluid path contains the transport fluid;
  - a second electrode in electrical communication with the second end of the first pumping conduit and with the first end of the first conducting conduit at the first junction when the fluid path contains the transport fluid; and
  - a cover on the solid substrate which seals the fluid path.
172. (Previously presented) The device of claim 171, further comprising a third electrode, wherein the third electrode is in electrical communication with the second end of the first conducting conduit when the fluid path contains the transport fluid.

173. (Previously presented) The device of claim 171, wherein the second end of the first

conducting conduit is in electrical communication with the first electrode when the fluid path contains the transport fluid.

174. (Previously presented) The device of claim 173, further comprising a second pumping conduit comprising a porous dielectric material having a first end and a second end, wherein the first end of the second pumping conduit is in electrical communication with the second end of the first conducting conduit at a second junction when the fluid path contains the transport fluid, and wherein the second end of the second pumping conduit is in electrical communication with the second electrode when the fluid path contains the transport fluid.

175. (Previously presented) The device of claim 174, further comprising a second conducting conduit, the second conducting conduit having a first end and a second end, wherein the first end of the second conducting conduit is in electrical communication with the second end of the second pumping conduit when the fluid path contains the transport fluid.

176. (Previously presented) The device of claim 175, further including a third electrode, wherein the third electrode is in electrical communication with the second end of the second conducting conduit when the fluid path contains the transport fluid.

177. (Previously presented) The device of claim 176, wherein the same voltage is applied to the first electrode and to the third electrode.

178. (Previously presented) The device of claim 171, wherein the fluid path contains a transport fluid in which electroosmotic flow can be induced.

179. (Previously presented) The device of claim 171, wherein the solid substrate comprises an electrically insulating material.

180. (Previously presented) The device of claim 171, wherein the solid substrate is selected from the group consisting of glass, silica, plastic and silicon.

181. (Previously presented) The device of claim 171, further comprising a first bridge, said first bridge providing electrical communication between the first electrode and the first end of the first pumping conduit, and a second bridge, said second bridge providing electrical communication between the second electrode and the second end of the first pumping conduit.

182. (Previously presented) The device of claim 182, further comprising a first electrolyte-filled fluid reservoir, wherein the first electrode is in electrical communication with the first bridge through the first electrolyte fluid reservoir.

183. (Previously presented) The device of claim 183, further comprising a second electrolyte-filled fluid reservoir, wherein the second electrode is in electrical communication with the second bridge through the second electrolyte fluid reservoir.

184. (Previously presented) An electrokinetic device comprising:

- a solid substrate, wherein the solid substrate comprises a fluid path formed in the solid substrate, said fluid path comprising a fluid entrance and a fluid exit;
- a plurality of pumping conduits in the fluid path, each having a first end and a second end and comprising a porous dielectric material, comprising a last pumping conduit in fluid communication with the fluid exit;
- a first electrode, wherein the first electrode is in electrical communication with the first end of each of the pumping conduits when the fluid path contains a transport fluid in which electroosmotic flow can be induced;
- a plurality of conducting conduits in the fluid path, each having a first end and a second end, wherein the first end of each of the conducting conduits is in fluid communication with the second end of one of the pumping conduits, comprising a last conducting conduit in fluid

communication with the second end of the last pumping conduit;

a second electrode in electrical communication with the second end of each of the pumping conduits when the fluid path contains the transport fluid;

a third electrode in electrical communication with the second end of the last of the conducting conduits when the fluid path contains the transport fluid; and

a cover on the solid substrate which seals the fluid path.

185. (Previously presented) An electrokinetic device comprising:

a solid substrate, wherein the solid substrate comprises a fluid path formed in the solid substrate;

a plurality of pumping conduits in the fluid path, each having a first end and a second end and comprising a porous dielectric material;

a first electrode, wherein the first electrode is in electrical communication with the first end of each of the pumping conduits when the fluid path contains a transport fluid in which electroosmotic flow can be induced;

a plurality of conducting conduits in the fluid path, each having a first end and a second end, wherein the first end of each of the conducting conduits is in fluid communication with the second end of one of the pumping conduits;

a second electrode in electrical communication with the second end of each of the pumping conduits when the fluid path contains the transport fluid; and

a cover on the solid substrate which seals the fluid path.

186. (Previously presented) An electrokinetic device comprising:

a solid substrate, wherein the solid substrate comprises a fluid path formed in the solid substrate;

a first pumping conduit in the fluid path having a first end and a second end, said first pumping conduit comprising a porous dielectric material;

a first conducting conduit having a first end and a second end, wherein the first end of the first conducting conduit is in electrical communication with the second end of the first pumping conduit at a first junction when the fluid path contains a transport fluid in which electroosmotic flow can be induced;

a second pumping conduit having a first end and a second end, said second pumping conduit comprising a porous dielectric material wherein the first end of the second pumping conduit is in electrical communication with the second end of the first conducting conduit at a second junction when the fluid path contains the transport fluid;

a second conducting conduit, the second conducting conduit having a first end and a second end, wherein the first end of the second conducting conduit is in electrical communication with the second end of the second pumping conduit at a third junction when the fluid path contains the transport fluid;

a first electrode, wherein the first electrode is in electrical communication with the first end of the first pumping conduit, with the second junction and with the second end of the second conducting conduit when the fluid path contains the transport fluid;

a second electrode, wherein the second electrode is in electrical communication with the first junction and with the third junction when the fluid path contains the transport fluid; and

a cover on the solid substrate which seals the fluid path.

187. (New) The device of claim 171, wherein the porous dielectric material of the first pumping conduit comprises a non-polar polymeric surface with an ionic material adsorbed thereon, the ionic material having a hydrophobic end and a charged end, wherein the hydrophobic end of the ionic material is adsorbed onto the non-polar polymeric surface, the charged end of the ionic material thereby providing a charged site on the non-polar polymeric surface.

188. (New) The device of claim 187, wherein the ionic material is a surfactant.

189. (New) The device of claim 187, wherein the non-polar polymeric surface comprises a polymer material selected from the group consisting of polyethylene and polypropylene.

190. (New) The device of claim 187, wherein the porous member comprises packed particles.

191. (New) The device of claim 185, wherein the porous dielectric material of at least one of the pumping conduits comprises a non-polar polymeric surface with an ionic material adsorbed thereon, the ionic material having a hydrophobic end and a charged end, wherein the hydrophobic end of the ionic material is adsorbed onto the non-polar polymeric surface, the charged end of the ionic material thereby providing a charged site on the non-polar polymeric surface.

192. (New) An electrokinetic device comprising:

(a) a conduit; and

(b) a porous member within the conduit, the porous member comprising a non-polar polymeric surface with an ionic material adsorbed thereon, the ionic material having a hydrophobic end and a charged end, wherein the hydrophobic end of the ionic material is adsorbed onto the non-polar polymeric surface, the charged end of the ionic material thereby providing a charged site on the non-polar polymeric surface.

193. (New) The device of claim 192, wherein the ionic material is a surfactant.

194. (New) The device of claim 192, wherein the non-polar polymeric surface comprises a polymer material selected from the group consisting of polyethylene and polypropylene.

195. (New) The device of claim 192, wherein the porous member comprises packed particles.